DOCUMENT RESUME

ED 102 474 CG 009 570

AUTHOR Latta, R. Michael
TITLE Relation of Causal Attribution and Success to Performance.
PUB DATE May 74
NOTE 17p.; Paper presented at the Annual Meeting of the Midwestern Psychological Association (Chicago, Illinois, May 1974)

EDRS PRICE MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS *Behavior Development; *Behavior Theories; College Students; Feedback; *Motivation; *Performance Factors; Research Projects; Speeches; *Success Factors
IDENTIFIERS *Attribution Theory; Weiner (B)

ABSTRACT

In testing Weiner's (1972) attribution theory of achievement behavior, success was found to produce (1) no differential attribution to effort for those high and low in achievement motivation, and (2) an early performance asymptote for those high in achievement motivation, while (3) it also facilitated performance independently of attributions. The process of requesting causal attributions facilitated performance independently of success and led to an early performance asymptote for those low in achievement motivation receiving success, while facilitating performance for those high in achievement motivation receiving success. (Author)

ED102474

BEST COPY AVAILABLE

RELATION OF CAUSAL ATTRIBUTION AND SUCCESS TO PERFORMANCE[1]

R. Michael Latta, Iowa State University

Abstract

In testing Weiner's (1972) attribution theory of achievement behavior, success was found to produce 1) no differential attribution to effort for those high and low in achievement motivation, and 2) an early performance asymptote for those high in achievement motivation, while 3) it also facilitated performance independently of attributions. The process of requesting causal attributions facilitated performance independently of success, and led to an early performance asymptote for those low in achievement motivation receiving success, while facilitating performance for those high in achievement motivation receiving success.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Paper presented at the annual Midwestern Psychological Association meetings, Chicago, Illinois, May 2, 1974.

CG 009 570

Weiner (1972) has developed an attribution theory of achievement behavior organized around the specific nature of mediating causal attributions. Following Heider (1958), Weiner offers effort, ability (power), luck, and task difficulty as the perceived causes of success and failure at achievement oriented tasks.

The model actually involves three stages: 1) task evaluation, 2) goal-directed behavior, and 3) outcomes and subsequent reevaluation. During the task evaluation stage, perceiving the task as achievement oriented evokes attributions concerning the four causal factors as potential causes of success and failure. The nature of these expectancies determines the hope of success, fear of failure, and probability of success estimates, which in turn govern goal directed behavior that results in success or failure in stage 2. In stage three, the causal attributions to effort, ability, luck, and task difficulty are reevaluated in light of the nature of the outcomes. Subsequent achievement oriented behavior is determined by these new attributions in a recursive process. In any event, the nature of the attributions to the four causal factors is assumed to be the cause of the achievement oriented behavior.

Initial research (Frieze and Weiner, 1971) provided some support for the reevaluation stage by showing observers to be capable of using success as a cue to make systematic inferences about the causes of successful outcomes. Further investigation showed these systematic inferences about the causes of success to vary with achievement motivation. For example, Kukla (1970) found subjects high in achievement motivation to attribute success to effort and ability more so than those low in achievement motivation, while Meyer (1970) found those low in achievement motivation to attribute

success to luck more so than those high in achievement motivation. Thus, individual differences in achievement motivation are assumed to systematically influence perception of the causes of success which determines subsequent achievement behavior.

Weiner (1972) has used the above analysis to account for the consistent finding that subjects low in achievement motivation exhibit increased performance following success while those high in achievement motivation exhibit performance decrements following success feedback (Weiner, 1966; Weiner and Schneider, 1971; and Zeller, 1951). Weiner (1972) has contended that the nature of the interaction of individual differences in achievement motivation and the motivational effects of success mediated by causal attributions involves: 1) decreased motivation following success feedback for those high in achievement motivation because success operates as a cue for those subjects to attribute success to the causal factor effort. Believing performance level to vary with effort, they "relax" following success and reduce their effort causing a performance decrement over trials. 2) Enhanced motivation following success feedback for those low in achievement motivation because success does not operate as a cue for effort attributions for these subjects. Lacking a belief that performance level varies with effort, these subjects maintain a constant level of effort causing performance increments over trials. As can be seen from this analysis, the attributions to effort, ability, luck, and task difficulty arising from the experience of success are assumed to cause the subsequent performance differences.

For the above analysis of achievement behavior to hold, several assumptions of Weiner's theory must be met. For example, attributions to the causal factors should vary with achievement motivation and the presence of success

feedback. Specifically, 1) those subjects high in achievement motivation should attribute success to effort more so than those low in achievement motivation, while 2) those low in achievement motivation should attribute success more to luck than those high in achievement motivation. Since attributions to the causal factors effort, ability, luck, and task difficulty are considered causal antecedents of achievement behavior, differences in attributions to these cognitive factors must vary with achievement motivation to account for performance differences that vary with achievement motivation.

The theory also specifies performance differences for subjects high and low in achievement motivation. Since motivation is decreased following success for those high in achievement motivation, their performance should decline following success. Also, since motivation is increased following success for those low in achievement motivation, their performance should rise following success.

The present study tested the above contentions by examining differences in attribution to the four causal factors and achievement behavior of those high and low in achievement motivation following success feedback. No feedback control groups were included to determine the independent effects of success feedback and the attribution process, since it is possible that the process of making causal attributions may have an effect independent of the nature of the outcomes. Unlike previous research, the present study was designed to investigate subjects' attributions concerning their own performance at an achievement oriented task.

Method

The design employed was a 2^3 factorial with two levels of achievement motivation (high and low), two levels of feedback (present and none), and two levels of causal attribution (requested and not requested).

Subjects

Subjects were 232 males enrolled in the introductory psychology course at Iowa State University during the spring quarter of 1973. From this original sample, a sub-sample of 160 was selected on the basis of achievement scores derived from the short form of the Mehrabian scale of achievement motivation for males. This 26 item self-report scale developed by Mehrabian (1968) was used to assess resultant achievement motivation. The sub-sample consisted of the top and bottom 35% of the original distribution of achievement scores.

Procedure

The task was a digit-symbol substitution task involving six digits and six symbols. The task was represented as achievement oriented by showing subjects a copy of the Wechsler Adult Intelligence Scale which employes a digit-symbol substitution task as a sub-scale. The intention of this manipulation was to maximally arouse any achievement motivation in the situation. After a thirty-second practice trial, there were six thirty-second trials of the task timed by a stop watch. Each trial consisted of the subject attempting to fill a single work-sheet of fifty possible substitutions. The large number of possible substitutions precluded any subject finishing a sheet on any given trial. This manipulation ensured perception of the task as a difficult one and prevented subjects slowing down as they neared completion of a trial. The dependent measure was the total number of correct substitutions completed during each trial.

Subjects in the four feedback present conditions were given success feedback following every even numbered trial. False norms indicated that the subject was doing twice as well as most college students attempting the task.

Following each trial, and feedback if present, those subjects in the four conditions required to make causal attributions concerning outcomes were requested to check on each of six separate paired-comparison scales the extent to which effort, ability, luck, and task difficulty played a part in determining their performance on the last trial. The actual scales were ten inches long and numbered from 1 to 99 in multiples of ten.

In the paired-comparisons format, the attributions were made with a certainty rating included. For example, the first pair was effort and task difficulty, with effort anchoring the left end of the scale and task difficulty the right. If the subject was certain effort was more important than task difficulty in determining this performance on the last trial, he placed his check to the left of the scale near the effort anchor. If the subject was uncertain as to which of the two factors was most important, he checked at the mid-point of the scale which was anchored with the word uncertain.

This certainty scale was used to obtain the attribution scores instead of a forced choice scale in order to reduce the effects of individual differences in response style while not creating spurious correlations between attribution scores (Wolins and Dickinson, 1973). The paired comparison scores derived from the certainty scale were treated as proportions and transformed to normal deviates prior to analysis.

Results

A separate attribution score was derived for each of the four causal factors effort, ability, luck, and task difficulty by summing the paired-comparison scores across the six trials. This resulted in each of the eighty subjects who were requested to attribute to causal factors having

four scores for attribution, one for each causal factor. Four independent 2 X 2 ANOVAs were conducted on the attribution scores to determine if the attributions varied with achievement motivation, success feedback, or their interaction.

Table 1 displays the mean attribution scores for subjects high and low in achievement motivation after summing across the six trials. A main effect of achievement motivation was the only significant effect in any of the four analyses. That effect was statistically significant only for attributions to luck and task difficulty, with those high in achievement motivation attributing more importance to task difficulty than those low in achievement motivation while luck was rated as more important by those low in achievement motivation as predicted. The rank order of importance of the causal factors was the same for subjects in both achievement motivation categories ---- effort, ability, luck, and task difficulty. In no case did attributions vary with the presence or absence of success feedback.

Insert Table 1 here

The results of a 2 X 2 X 2 X 6 split plot ANOVA performed on the total number of correct digit-symbol substititions appears in Table 2.

Insert Table 2 here

Figure 1 shows the mean performance of those high and low in achievement motivation as it develops over trials as a function of experimental condition. Figure 1-A and 1-B shows that either success feedback or merely requesting attributions to causal factors facilitated performance for both high and low achievement motivation subjects. However, success feedback

without requesting attributions led to an early performance asymptote for those high in achievement motivation as predicted. Finally, inspection of Figure 1-C and 1-D shows that the process of requesting attributions following success feedback led to an early performance asymptote for those low in achievement motivation, but produced a higher performance asymptote for those high in achievement motivation.

Insert Figure 1 here

Discussion

The results of the present investigation provide little support for Weiner's (1972) attribution theory of achievement behavior. Overall, the results suggest that the process of making attributions to causal factors concerning one's own performance influences subsequent performance to a greater extent than individual differences in the tendency to make specific attributions. Although success feedback did cause differential performance for those high and low in achievement motivation, Weiner's hypotheses of individual differences in the tendency to make attributions to effort was not supported. This lack of replication of Meyer (1970), Kukla (1970), and Frieze and Weiner (1971) concerning differences in effort attributions following success feedback may be explained by differences in methodology. For example, Frieze and Weiner's study was simulated and did not involve actual task performance by subjects, Kukla used a task that was ambiguous as to the causes of successful outcomes, and Meyer never allowed subjects to complete the task, while the present study involved subjects' inferences about the causes of their own performance. However, regardless of differences in methodology, the crucial point is that if differences in attributions to effort are a mediating cause of differences in performance, then

these differences must be demonstrable for attributions about self. The present results indicate this is not the case.

The nature of the three-way interaction of achievement motivation, success feedback, and the attribution process also provides no support for Weiner's theory. For example, Figure 1-C shows that the facilitating effects of success on the performance of those low in achievement motivation was attenuated by the process of attributing, leading to performance no better than the controls. This should not have occurred if success enhances the motivation of subjects low in achievement motivation because they attribute success to luck. The attribution process had the opposite effects on the performance of subjects high in achievement motivation receiving success feedback. Whereas these subjects reached an early performance asymptote when given only success feedback, requesting attribution to causal factors in the presence of success feedback facilitated their performance. If attributing success to effort demotivates subjects high in achievement motivation, the attribution process should not have facilitated the performance of subjects high in achievement motivation receiving success feedback.

The finding that the pattern of attributions did not vary with the presence of success feedback is ambiguous. Those not given success feedback may have experienced subjective success, or success may not have influenced attributions as Weiner (1972) specifies. It is impossible to choose between these two explanations given the limitations of the present study.

In summary, even though those low in achievement motivation attributed more importance to the causal factor luck than those high in achievement motivation as Weiner (1972) would predict, and even though those high in achievement motivation considered effort the most important cause of success,

the results of the present study do not provide strong support for Weiner's (1972) contention that individual differences in achievement motivation systematically influence effort attributions about self performance following success. It appears that differential self attributions do not cause subsequent performance differences. Indeed, further research may indicate the attribution (cognitive) and performance (behavioral) response classes to be relatively independent.

In defense of Weiner, it should be pointed out that the effects of failure may be mediated by the attribution process as specified in his theory. Future research may salvage that portion of the theory. Also, a variety of tasks need to be employed in future research since task difficulty probably influences the first stage in the attribution process to a great extent. Furthermore, it is quite possible that the attribution process works the way Weiner (1972) has specified only in rather ambiguous situations where the causes of success are not as clear cut as they were in the present study. As with any personality variable, powerful situational factors may obscure the effects of individual differences in the tendency to make specific attributions to effort, ability, luck, or task difficulty. Future research should clarify the limitations of the theory.

References

Frieze, I., and Weiner, B. Cue utilization and attributional judgments for success and failure. Journal of Personality, 1971, 39, 591-605.

Heider, F. The Psychology of Interpersonal Relations. New York: John Wiley and Sons, 1958.

Kukla, A. Cognitive determinants of achieving behavior. Unpublished doctoral theses, University of California, Los Angeles, 1970.

Mehrabian, A. Male and female scales of the tendency to achieve. Educational and Psychological Measurement, 1968, 28, 493-502.

Meyer, W. V. Selbstverantwortlichkeit und Leistungsmotivation. Unpublished doctoral dissertation, Ruhr Universität, Bochum, Germany, 1970.

Weiner, B. The role of success and failure in the learning of easy and complex tasks. Journal of Personality and Social Psychology, 1966, 3, 339-344.

Weiner, B. Theories of Motivation. Chicago: Markham, 1972.

Weiner, B., and Schneider, K. Drive versus cognitive theory: A reply to Boor and Harmon. Journal of Personality and Social Psychology, 1971, 18, 258-262.

Wolins, L., and Dickinson, T. L. Transformations to improve reliability and/or validity for affective scales. Educational and Psychological Measurement, 1973, 33, 711-713.

Zeller, A. F. An experimental analogue of repression: III. The effect of induced failure and success on memory measured by recall. Journal of Experimental Psychology, 1951, 65, 59-66.

Footnotes

1. Portions of this paper are contained in a masters thesis conducted by the author at Iowa State University under the direction of Dr. Richard L. Patten. The author also thanks Dr. Arnold Kahn for his helpful comments on an earlier draft of this paper.

Table 1

Mean Attribution Scores for Those High and Low in Achievement Motivation after Summing Across Six Trials

	Effort	Ability	Luck	Task Difficulty
High Achievement Motivation	2355	2282	0.0	1768
Low Achievement Motivation	2096	2152	643	1513
$F_{1,76}$	2.57	.82	9.15**	3.95*

*$p < .05$

**$p < .01$

Table 2

Summary of the Analysis of Variance of Correct Digit-Symbol Scores as a Function of the Experimental Conditions

Source	DF	MS	F
Achievement Motivation (AM)	1	61.51	< 1
Feedback (FB)	1	114.13	1.68
Attribution (AT)	1	.88	< 1
AM X FB	1	29.75	< 1
AM X AT	1	137.26	2.01
FB X AT	1	272.00	4.00**
AM X FB X AT	1	14.26	< 1
Subjects (AM X FB X AT)	152	67.88	
Trials (TR)	5	356.03	67.00**
AM X TR	5	3.34	< 1
FB X TR	5	4.15	< 1
AT X TR	5	1.80	< 1
AM X FB X TR	5	4.17	< 1
AM X AT X TR	5	7.46	1.42
FB X AT X TR	5	1.21	< 1
AM X FB X AT X TR	5	11.77	2.23*
Subjects (AM X FB X AT)	760	5.34	
Corrected Total	959		

*$p < .05$

**$p < .01$

Figure Captions

Figure 1. Number of correct substitutions as a function of experimental condition.

BEST COPY AVAILABLE